Full Steam Ahead: U.S. Navy/Marine Corps Birdstrike Identification Program at the Smithsonian Institution

James Whatton, Carla Dove, Marcy Heacker, Faridah Dahlan
Smithsonian Institution, National Museum of Natural History, Feather Identification Lab

INTRODUCTION

Roxie Laybourne, founder of the Feather Identification Lab (FIL) and Pioneer of Forensic Ornithology, provided identifications for the US Navy on a contractual basis until 2003. The current interagency agreement, in its second year with Navy Region Southeast operates on an annual basis and allows for birdstrike identification services for the entire US Navy and Marine Corps. The protocol to have birdstrike remains identified calls for an electronic WESS (Web Enabled Safety System) report to be filed and the bird remains to be sent to the Smithsonian. Once the wildlife remains are identified, the information is sent to the Navy Safety Center at Norfolk, VA where the information is entered into WESS. Field personnel who send the remains are also informed of the identifications.

Cases per Month

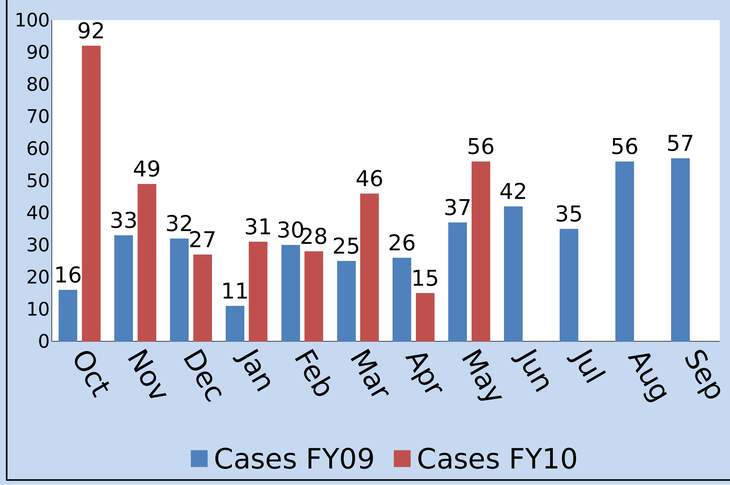

Figure 1.
Monthly breakdown of birdstrike cases sent in by Navy and Marine Corps personnel for the first two fiscal years of the interagency agreement.

Importance of collecting and sending wildlife remains to FIL

- FIL has many tools to identify all types of remains including a large reference collection of specimens, microscopic slides and a DNA laboratory
- FIL stores all cases for a minimum of 3 years and can review identifications
- FIL has the ability to examine past birdstrike cases or implement new technology as it becomes available (i.e. stable isotope analysis for migratory status, DNA sexing for numbers of individuals.
- Confirming field identifications provides more accurate

Top Participating US Navy and Marine Corps Installations

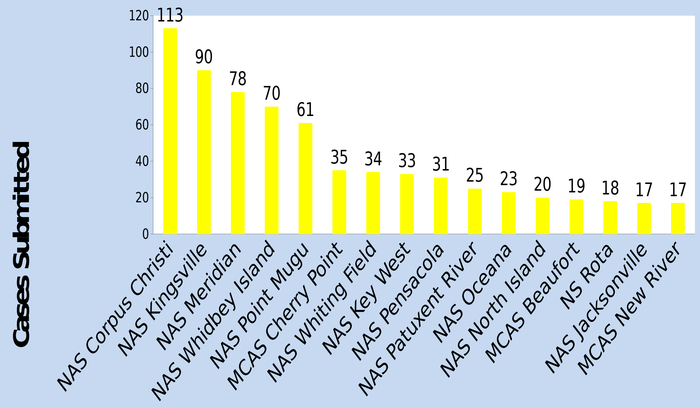

Figure 2.
Leading Navy and Marine Corps bases participating in the partnership by sending in remains to the FIL. The number of cases sent in by each bases is on the y-axis.

PROGRAM OVERVIEW

Since the agreement began in October 2008, Navy personnel have sent in **a total of 749 cases** with 778 samples. The case by month breakdown per fiscal year can be seen in Figure 1. This year we have seen an increase of 120 cases for the same period last year. Proper collection of remains is important for the FIL to obtain the most specific ID possible.

Birdstrike remains have been submitted from **28 installations** and were collected by a variety of Navy, USDA Biologists, and Marine Corps personnel. The top participating base are shown in Figure 2.

Identification methods used for Navy/Marine cases included: whole feathers (37%), DNA analysis (35%), feather microstructure (16%). Twelve percent (12%) of the cases involved using multiple ID methods – **emphasizing the importance of collecting a variety of material**.

Wildlife species identified most frequently (Fig. 3) are consistent with those involved in US Air Force and civil birdstrikes. We have identified 186 species of wildlife (87% to species level).

There have been 12 damaging cases (Class A, B, or C) in which

DISCUSSION

Based on the current analysis, we predict that FIL will continue to receive increased casework from US Navy/Marine Corps. This can be accredited to increased awareness of the program and proactive participation of Navy personnel in the field who are doing an outstanding job of recognizing and collecting wildlife remains after a strike.

We also predict that reporting will likely increase as more people are familiar with the service. The US Navy is developing its first BASH instruction for birdstrike issues and plans to require the following: 1) reporting all wildlife strikes into WESS; 2) collecting and submitting all birdstrike remains for identification by SI-FIL.

Participation in the new agreement between US Navy/SI-FIL is a critical way to show the need for this type of species identification service and provide accurate data to field biologists who implement BASH management plans. The FIL hopes the partnership will to continue to grow and will provide valuable information to Navy and Marine Corps personnel.

Most Common Identifications for Birdstrikes to US Navy and Marine Corps Aircraft

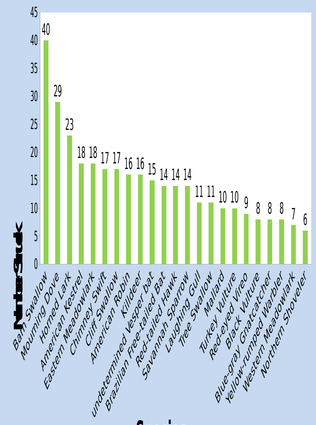

Figure 3.
Most commonly struck wildlife to Navy/Marine Corps aircraft. The identifications include all remains identified to at least family.

For more information or questions contact the authors at the Feather Lab - (202) 633-0801 or via email whattonj@si.edu, dovec@si.edu, heackerm@si.edu, dahlanne@si.edu